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Editorial.—In the October *Naturalist* J. B. Ellis and Dr. Geo. Martin describe 13 new species of fungi, 5 of which belong to the genus *Cercospora* and 4 to *Sphæria*.

A solution of caustic potash brings out clearly to the unaided eye the presence of the concealed chlorophyll in the red beet leaf, thus making it a good class illustration.

One of the best plants in which to observe the presence of starch in the chlorophyll masses is *Spirogyra*. There is no necessity of discharging the chlorophyll but the iodine test can be applied at once bringing out beautifully the rich starch contents.

Miss M. Bockee Flint, of Adrian College, Michigan, has just been observing the capsules of *Hamamelis Virginiana* discharge their seeds. A branch lying upon her table and drying rapidly, the capsules began to discharge and the shining black nutlets were sent upward to the ceiling, a distance of at least twelve feet.

Mr. H. W. Preston, in the November *Naturalist*, gives an account of a botanical excursion to Mt. Mansfield and Smuggler's Notch, Vermont, which is enough to make our collectors turn green with envy. Those of us who cannot visit these interesting places must content ourselves with the very beautiful specimens of Messrs. Pringle and Hosford.

In some of our horticultural journals a plea is being made for the cultivation of the much abused dandelion. Not as a pot herb, for this is already done, but as a brilliant flower, that can be made to show its bright gold when everything else is held in by the winter's chill. Success to our humble friend! and when we have ridden our own lawn of its myriad roots we too may be tempted to cultivate it.

In the *Torrey Bulletin* for October, Mr. E. L. Greene describes some more new western plants, one of them being a new genus of *Compositæ* and named *Holozonia*. This plant has been long known imperfectly and has been placed under both *Hemizonia* and *Lagophylla* under the specific name of *filipes*, but upon obtaining complete specimens Mr. Greene decides that it can belong to neither of these genera and the new one is proposed.

IT IS WITH REGRET that we have to record the death of one of our well known botanists. Mr. Elihu Hall, of Athens, Ill., died on the 24th of September last, at the age of 60 years. Mr. Hall's name is very intimately associated with many of our Rocky Mountain plants, the collection of Hall and Harbour in 1862, being among the richest in new species ever made. He botanized extensively in both Texas and Oregon, and in the second volume of the GAZETTE he published quite an extended list, with notes, of the "Arboreous, Arborescent and Suffruticose Flora of Oregon." The frequent appearance of the specific name *Hallii* among our western plants will ever be a reminder of him and his work, a reminder which he would most appreciate, his name linked with the plants he loved so well.

DR. JOHN A. WARDER, President of the American Forestry Association, has just issued a pamphlet bearing the title "Woody Plants of Ohio." In this work he has been assisted by Davis L. James and Joseph F. James, of the Cincinnati Society of Natural History. Dr. Warder is an old and skillful forester and few men have so intimate a knowledge of the "tricks and ways" of our woody plants. Having been fortunate enough to drink inspiration from Nuttall himself, he has never lost it, and is ever anxious to impart his great practical knowledge to others. He has conceived rightly that there is dense ignorance among farmers as to trees and this pamphlet is ostensibly addressed to this class, for the purpose of instruction, but the numerous notes are of great value also to the scientific botanist.

PROF. G. BRIOSI, of Rome, announces the discovery of a new organ upon the germinating plant. It consists of a collar or ring from which develop the equivalents of long "root-hairs." This "annulus" appears at the junction of the caulicle and root. The discovery was made upon the germinating seeds of *Eucalyptus globulus*. This organ is, of course, by no means of universal occurrence and the author mentions a few species and groups in which it is found in greater or less prominence. Briosi considers the function of this collar of hairs that of ordinary root-hairs; "it is a provision for the absorption of moisture from the soil, which comes into action at a very early period in germination, before the root and its root-hairs are produced." An interesting notice of Briosi's paper is given by Dr. Gray in the *Am. Jour. Sci.* for October.

PROF. T. J. BURRILL has for some years been engaged in studying a certain plant disease, known as blight, which he concludes is caused by the presence of living organisms known by that very poorly defined name, *Bacteria*. In the last number of the *Amer. Micr. Journal* he gives a very interesting account of certain vegetable poisons which he attributes to the presence of similar organisms. *Rhus Toxicodendron* was the most carefully observed and in its juices were discovered swarms of active bacteria, which

upon being applied to the skin in some way effected an entrance and soon began multiplying, giving rise to the well known itching and blisters. In the serum from the blisters the white blood corpuscles were found filled with wriggling bacteria. The same were found, though not so carefully studied, in the poisonous fungi. The conclusion is reached that many plants harbor these bacteria, which upon being transferred to man induce disease and hence are called poisonous.

In a history of Floyd County, Iowa, Prof. J. C. Arthur has published an account of the botany of that region. It has the merit of being an unusual method of treating such a subject which is at the same time philosophical. The usual method is to give a bare list of the Phanerogams, and may be the Ferns, entirely neglecting those vast groups of organisms which are below them in rank but are very important. Such a list could not be given in an exhaustive way but the grouping of the leading forms in a scientific way will be a revelation to old fashioned botanists who know of nothing lower than that old "catch-all" called "Fungi." Prof. Arthur explains all these groups in such a simple way that any one can understand them and know where to look for illustrative forms. The grouping is the one given in Bessey's Botany which divides the plant kingdom into seven great groups, viz: 1. *Protophyta* or Sexless Plants. and some of the uninitiated citizens of Floyd County must have been startled by the Professor when they read of some members of this group that "they creep about over the ground, and in dry weather crawl beneath the surface, or under sticks and leaves"; 2. *Zygosporeæ* or Unisexual Plants, under which a simple description of the common *Spirogyra* is given and certain molds; 3. *Oosporeæ* or Egg-spore Plants, illustrated by *Saprolegnia* or the fly-fungus and the potato-fungus; 4. *Carposporeæ* or Mushrooms and their Allies, in which group one can hardly look around without finding abundant means of illustration; 5. *Bryophyta* or Mosses and Liverworts; 6. *Pteridophyta* or Ferns and their Allies; 7. *Phanerogamia* or Seed-bearing Plants. The idea that Phanerogams form the principal part of the vegetable kingdom fades away under such a treatment of the subject and this great division shrinks to its proper dimensions as but one of seven groups. At the same time, while this is science, sentiment will always consider that Phanerogams contain about all the plants worth mentioning.

The black-fruited Cratægi and a new species.—We know within the limits of our flora of two black-fruited *Cratægi*, both from the western half of the continent. Mr. G. W. Letterman has now discovered a third one along Red River. These three species may be distinguished from our ordinary red-fruited ones, to be designated as Sect. *Erythrocarpus*, as Sect. *Melanocarpus*, and may be characterized by their black or black-purple or bluish fruit;

leaves, at least at first, appressed hairy on the upper and glabrous on the under side; flowers in corymbs, styles usually 5; spines mostly short and stout, often recurved. The three species are:

C. Douglasii, Lindl., the westernmost species, from British Columbia to California, with broader, thinner, doubly serrate leaves, the upper ones on the shoots lobed, and with broad, incised-toothed stipules; calyx lobes usually entire; fruit smaller, black-purple, ripe (in Northern California) in August; nutlets 2 to 3 lines long, strongly ridged on the back; spines ½ to 1 inch long.

C. rivularis, Nutt., in the Rocky and Wasatch Mountains of Colorado and Utah, with narrower, more rigid, lanceolate-ovate, singly serrate leaves, only the upper ones of the shoots broader, doubly serrate or rarely slightly incised, with narrow glandular-incised stipules; calyx lobes usually glandular; fruit larger; nutlets 3 lines long or over, usually strongly ridged on the back; spines few, ½ to 1 inch long.

C. BRACHYACANTHA, Sargent & Engelmann. A tree 20 to 30 feet high, or sometimes larger, with smoothish or, in very old trunks, rough bark; spines on the whitish branches numerous, stout, short (3 to 6 or 8 lines long), mostly curved, sometimes terminating the branches; leaves lanceolate-oblong to ovate or rhombic, 1½ to 2 or 2½ inches long, attenuate into a short petiole, thick and almost coriaceous, appressed-serrate, shining, with ribs almost obliterated, those of the terminal shoots larger, broader, slightly lobed, with large foliaceous dentate or sub-entire stipules *; flowers small for the genus, with broadly lanceolate entire calyx lobes and 5 styles; fruit depressed-globose, about ½ inch through, black-blue with bloom; nutlets (3 lines long) with 2 slight grooves on the nearly smooth back.

In the Red River region, first collected by *Drummond* (Louisiana Coll. 1832, no. 105 in part); Webster Parish, La., *C. Mohr*, 1880, both without flower or fruit; Concord, Texas, *C. S. Sargent*, March 29, 1881, with flower buds; west of Longview, Texas, *G. W. Letterman*, August 19, 1882, with mature fruit, "they looked from a distance like plum trees with small blue fruit, the ground under them was covered with the fallen haws." The species is easily recognized by its coriaceous, shining almost ribless leaves; in *C. Douglasii* they are broader, membranaceous and dull, in *C. rivularis* intermediate between the two.

I may add here that Prof. Sargent rediscovered the obscure *C. berberifolia*, Torr. & Gray, which was founded on a single flowerless specimen, in the very region, near Opelousas, Wester.. Louisiana,

*The stipules of Cratægus are not often noticed and I am not sure that they possess much constancy or diagnostic value. Generally they are found only or at least are most persistent on the shoots; they are always oblique and petioled or stipulate, broadly triangular to linear, mostly incised-dentate or sometimes glandular-dentate, rarely entire.

where Dr. Carpenter first collected it about 50 years ago; it is a small tree with dark ash-gray branchlets bearing numerous long (1½ to 2 inches long) stout straight spines; leaves spatulate or obovate, obtuse, attenuate into a short petiole or almost sessile, simply serrate towards the upper part, ¾ to 1½ inches long; those of the shoots similar or acutish, often doubly or incisely serrate or slightly lobed, with linear glandular stipules, all persistently pubescent; compound corymb woolly; flowers large, calyx lobes linear, entire; styles 3; fruit unknown.—G. ENGELMANN.

Salix flavescens, Nutt., var. Scouleriana.—In undertaking a revision of the Willows for the *Flora of California* it was found that the material available for the purpose was, in some respects, very scant and unsatisfactory. The rich collections which have since been made, while confirming the accuracy of some portions of the work done under such unfavorable circumstances, reveal, in other directions, incompleteness and mistakes which I expect to correct in a lump by and by. It is desirable, however, that the following correction be made immediately.

The typical *Salix flavescens* of Nuttall is a Rocky Mountain shrub, or small tree, found also in the Sierra Nevada and the mountains of Oregon and Washington Territory, while the coast forms, constituting the greater portion of what is included under the name of *S. flavescens* in the Flora of California, should be arranged as a variety of that species for which the old name of *Scouleriana* might well be retained, and under which *S. brachystachys*, Benth., and *S. cuneoides*, And., would be placed as striking modifications. While *S. flavescens* and var. *Scouleriana* exhibit an intricate diversity of forms which defy the drawing of any line between them, all are easily enough distinguished from their Atlantic representative *S. discolor*; and so also, *S. lasiolepis* and var. *Fendleriana* (of corresponding range and affinity) are more nearly allied to each other than is either to the Atlantic *S. lucida*. I may remark that this is in accordance with Prof. Sargent's recent statement that "the North American continent may be most conveniently divided, in regard to its forest geography, into Atlantic and Pacific regions, by the line of the eastern base of the Rocky Mountains."—M. S. BEBB.

The Flora of North America.—Last summer at Montreal Dr. Gray read a paper bearing the above title, which is so full of interest to every American botanist that we can hardly forbear publishing it in full as it appears in the *Am. Jour. of Science* for November. We will however pass over all that was said in regard to the Floras of Michaux and Pursh and give that concerning Dr. Gray's own work, for his name will always be more intimately associated with the North American Flora than that of any other botanist. There is too a good deal of ignorance as to the nature

of the work, and a false notion that it might be done faster. If any one should try such work, the only wonder would be that it could be done so rapidly. The appeal for help which Dr. Gray makes, as well as the protest against needless requests for information,deserve to be broadcast. The portion of the paper referring to Dr. Gray's connection with our flora is as follows:

I cannot say how early it was that my revered master, Dr. Torrey, conceived the idea of the Flora which he at length undertook. But he once told me that he had invited Nuttall to join him in the production of such a work, and that Nuttall declined. This must have been as early as the year 1832, that is, half a century ago. My correspondence with Dr. Torrey began in the summer of 1830, when I was a young medical student, and three or four years afterward I joined him at New York and became, for a short time, his assistant, for all the rest of his life his botanical colleague. He was very much occupied with his duties as professor, chiefly of chemistry; he had not yet abandoned the idea of completing his Flora of the Northern and Middle States, the first volume of which was finished in 1824, while yet free from all professional cares. Although working in the direction of the larger undertaking, the *Flora of North America* did not assume definite shape before the year 1835. I believe that some of the first actually-prepared manuscript for it was written by myself in that or the following year. I was then and for a long time expecting to accompany the South Pacific Exploring Expedition, as originally organized under the command of Commodore Ap. Catesby Jones, but which was subject to long delay and many vicissitudes; during which, having plentiful leisure, I tried my prentice hand upon some of the earlier natural orders. Before the expedition, as modified, was ready to sail, under the command of Capt. Wilkes, I had accepted Dr. Torrey's proposal that I should be his associate in the work upon which I had made a small beginning as a volunteer. Two parts, or half of the first volume (360 pages), of this Flora, were printed and issued in July and October, 1838.

It was thought at first, in all simplicity, that the whole task could be done at something like this rate. But, apart from other considerations, it soon became clear that there had been no proper identification of the foundation-species of the earlier botanists, from Linnæus downward; and that our Flora could not go on satisfactorily without this. Dr. Torrey had, indeed, some years before, made a hasty visit to Hooker at Glasgow, to London, and to Paris; but the taking of a few notes upon some particular plants in the herbaria of Hooker, Lambert, and Michaux, and the acquisition, from Hooker, of a good set of the Arctic plants of the British explorers, was about all that had been done. I proposed to attempt something more; so, taking advantage of a favorable opportunity, I sailed for Liverpool in November, 1838, and devoted a good part

of the ensuing year to the examination of the principal herbaria, which I need not here specify, in Scotland (where the important one of Sir Wm. Hooker still remained), England, France, Switzerland and Germany, namely those which contained the specimens upon which most of the then-published North American species had been directly or indirectly founded, especially those of Linnæus and Gronovius, of Walter, of Aiton's Hortus Kewensis, Michaux, Willdenow, Pursh, and the later ones of DeCandolle and Hooker.

After my return the work made good progress: the remaining half of the first volume was brought out in the spring of the year 1840, and by the spring of 1843 the 500 pages of the second volume, mostly occupied by the vast order Compositæ, had been issued. But meanwhile I had in my turn to assume professorial duties and incident engagements,—with the result that, although the study of North American plants was at no time pretermitted, either by Dr. Torrey while he lived, or by myself, we were unable to continue the publication during my associate's life-time; and it was only recently, in the spring of 1878, that I succeeded in bringing out, in a changed form, another instalment of the work, completing the *Gamopetalæ*.

In the interval I had made two year-long visits to Europe for botanical investigation, the first partly relating to the botany of the South Pacific, the second wholly in view of the North American flora. And since the last publication still another visit—the fourth and we may suppose the last—of the same character and the same duration, has been successfully accomplished.

The serious question, in which we are all concerned, arises, whether this work can be carried through to a completion, and the older parts (wholly out of print and out of date) re-elaborated—I will not say by my hands—but in my time, or soon enough to render the whole a reasonably full and homogeneous representation of the North American flora, as known in this latter part of the nineteenth century. And it brings us to consider why the undertaking to which so much time has been devoted, should be so slow of accomplishment.

If this slowness is a constant wonder and disappointment to most people interested in the matter, I can only add that it is hardly less so to myself. It is a constant surprise—if one may so say—that the work does not get on faster.

Of course the undertaking has become more and more formidable with the enlargement of geographical boundaries and of the number of species discovered. As to the increase in the number of species to be treated, we have by no means yet reached the end. The area, that of our continent down to the Mexican line, we trust is definitely fixed, at least for our day. And, since we cannot be rid of the peninsula and keys of Florida, which entails upon us a considerable number of tropical species, mostly belonging to the West Indies—the southern boundary is now as natural a one as we can have.

The area which Pursh's Flora covered was, we may say, the United States east of the Mississippi, with Canada to Labrador, to which was added a couple of hundred of species known to him outside these limits northwestward.

Torrey and Gray's Flora took the initiative in annexing Texas ten years before its political incorporation into the Union: although the only plants we then possessed from it were certain portions of Drummond's collections. California was also annexed at the same time, on account of Douglas's collections, and those of Nuttall, who had just returned from his visit to the western coast, which he reached by a tedious journey across the continent over ground in good part new to the botanist. Douglas had already made remarkably full collections along a more northern line. The British arctic explorers, both by sea and land, had well developed the botany of the boreal regions, and Sir Wm. Hooker was bringing out the results in his Flora of British America. Of course our knowledge of the whole interior and western region was small indeed, compared with the present; and the botany of a vast region from the western part of Texas to the Californian coast was absolutely unknown, and so remained until after the publication of the Flora was suspended.

As to the number of species which Torrey and Gray had to deal with, I can only say that a rapid count gives us for the first volume about 2200 Polypetalæ: that there are 109 species in the small orders which in the second volume precede the *Compositæ*: and that there are of the *Compositæ* 1054. So one may fairly conclude that if the work had been pushed on to completion, say in the year 1850, the 3076 species of Pursh's Flora in the year 1814 might have been just about doubled. Probably more rather than less; for if we reckon from the number of the *Compositæ*, and on the estimate that they constitute one-eighth of the phænogamous plants of North America, instead of 6150, there would have been 8430 species known in the year specified.

It most concerns us to know the number of species which, after the lapse of thirty years more—years in which exploration has been active, and has left no considerable part of our great area wholly unvisited—the now revived Flora has to deal with. We can make an estimate which cannot be far wrong. In the year 1878, my colleague, Mr. Watson, finished and published his Bibliographical Index to the Polypetalæ of North America, covering, that is, the same ground as the first volume of Torrey and and Gray's Flora, completed in 1840. In it the 2200 species of the latter date are increased to 3038. The "*Gamopetalæ* after *Compositæ*" in the Synoptical Flora, brought out in the same year, contains 1656 species. The two together must make up half of our phænogamous botany, that is, adding the increase of the last four years, about 5000 species. And so Mr. Watson adopts the estimate of 10,000 species for our known Phænogams and Ferns.

My impression is that the species of *Compositæ* have increased at a rate which, unless they exceed the eighth part of our Phænogams, will warrant a still higher estimate. The number of introduced species of various orders, which will have to be enumerated and most of them described, is, unhappily, fast increasing*: and new indigenous species are almost daily coming to us from some part or other of our wide territory. So that the 10,000 species of this estimate may before long rise to eleven or twelve thousand. Only the experienced botanist can form a just idea of what is involved in the accurate discrimination and proper co-ordination of 10–12,000 species, and in the putting of the results into the language and form which may make our knowledge available to learners or to succeeding botanists.

Moreover, there is of late an *embarras des richesses* which is becoming serious as respects labor and time. The continued and ever increasing influx of materials to Cambridge, beneficial as it ever is, is accountable for this retardation of progress in a greater degree than almost any one would suppose. The herbarium, upon whose materials this work is mainly done, and which has been, like the Temple, full forty and six years in building, has received the contributions of two generations of botanists, and the Torrey herbarium goes back one generation further. Still the number of American specimens annually coming to it is greater than in most former years. Apart from the mere selection and care of these, consider how in other ways it affects the rate of progress of the Flora. The incoming of additional specimens may at a glance settle doubts as to the validity of a species; but new specimens are as apt to raise questions as to settle them, more commonly they raise the question as to the limitation and right definition of the species concerned, not rarely, also, that of their validity. When one has only single specimens of related species, the case may seem clear and the definition easy. The acquisition of a few more, from a different region or other conditions, almost always calls for some re-consideration, not rarely for re-construction. People generally suppose that species, and even genera, are like coin from the mint, or bank notes from the printing press, each with its fixed marks and signature, which he that runs may read, or the practiced eye infallibly determine. But in fact species are judgments—judgments of variable value, and often very fallible judgments, as we botanists well know. And genera are more obviously judgments, and more and more liable to be effected by new discoveries. Judgments formed to-day—perhaps with full confidence, perhaps with misgiving—may to-morrow, with the discovery of new materials or the detection of some before unobserved point of structure, have to be weighed and decided anew. You see

* I say "unhappily," for they adulterate the natural character of our flora, and raise difficult questions as to how much of introduction and settlement should give to these denizens the rights of adopted citizens.

how all this bears upon the question of time and labor in the preparation of the Flora of a great country. If even in old Europe the work has to be done over and over, how much more so in America, where new plants are almost daily coming to hand. It is true that these fall into their ranks, or are adjustable into their proper or probable places, but not without pains-taking and tedious examination.

Of our Flora, it may indeed be said, that "If 'twere done when 'twere done, then 'twere will it were done quickly." But I may have made it clear that, in the actual state of the case, it is likely to be done slowly. At least you will understand why thus far it has been done slowly. As to the future, if it depended wholly upon me, the completion would obviously be hopeless. I need not say that our dependence, for the actual elaboration, must largely be upon associates, upon the few who have the training and the vast patience, and the access to herbaria and libraries, requisite for this kind of work, but above all upon my associate in the herbarium at Cambridge, to whom, being present with us, I will not further allude.

Of course we rely, very much indeed, upon the continued cooperation of all the cultivators of botany in the country; and it is gratifying to know that their number is increasing, new ones not less zealous than the old, and better equipped, are taking the places of those that have passed away and some of them extending their explorations over the remotest parts of the land, and into districts where there is most to be discovered. All can help on the work, and all are doing so, by the communication of specimens and of observations. Those within the range of the published manuals and floras get on—or should get on—with only occasional help from us. They should send us notes and specimens to any amount; but they should not ask us to stop to examine and name their plants, except in special cases, which we are always ready enough to take up. Those who collect in regions as yet destitute of such advantages may claim more aid, and we take great pains to render it; partly on our own account, that we may assort their contributions into their proper places, partly for the encouragement of such correspondents, who otherwise would not know what they have obtained, and who naturally like to know when they have made interesting discoveries.

But the scattered piecemeal study of plants is neither very satisfactory nor safe. And it involves great loss of time, besides interrupting that continuity and concentration of attention which the proper study of any group of plants demands. As respects the orders of plants which are yet to be elaborated for the Flora, and as to plants which require critical study or minute examination, necessarily consuming much time, it is better to defer their complete determination until the groups to which they severally belong are regularly taken in hand.

The co-operation of all our botanical associates is solicited in this regard, as a matter of common interest and advantage. For we are all equally concerned in forwarding the progress of the Flora of North America; and we may confidently expect from our botanical associates their sympathy, their forbearance, and their continued aid.

Albinism in Gentiana crinita.—I noticed in the window of one of our Boston city florists a few mornings ago two large bunches of white fringed gentian, and on enquiry learned that they came from Middlesex County, Mass. The petals of the open flowers were creamy white, and the face had a beautiful satiny lustre.

Later my friend Storrow Higginson informed me that he had seen in another florist's window white gentians that were gathered in Brookline, Mass. Mr. Higginson procured a specimen for analysis, but could not find any other difference between it and the normally blue flowers. He commented, however, on the perfect whiteness of the fringe.

I do not now recall any previous mention of albinism in this flower, although it may have been recorded. I have not time at present to look it up, but in any case a record of the present instances may be of interest.—GEO. E. DAVENPORT, *Medford, Mass.*

Trifolium hybridum, L.—On reading, in the October number of the GAZETTE, Mr. James' note on this species of *Trifolium*, I thought it might be of interest to note, that in Western Canada it is not at all uncommon, and about London I find it plentiful. It occurs not only in old fields and along fence sides, but I have found it in woodlands and along the borders of cedar swamps at quite a little distance from any cultivated ground, showing that here at least it has become pretty firmly fixed.

In a synopsis of the Flora of the Valley of the St. Lawrence and Great Lakes, published by Profs. Macoun and Gibson, in the Canadian Journal for January 1877, it is catalogued as "Introduced. Cultivated fields and along fences. Is very extensively cultivated in the West instead of *T. pratense*."

It is also reported from Eastern Canada in the vicinity of Ottawa, in the proceedings of the Ottawa Field Naturalist's Club for 1879 and '80, and in a letter just to hand from Prof. Macoun, he tells me that he found this species of *Trifolium* growing most luxuriantly at the foot of the Schickshook Mountains, Quebec, in the vicinity of an old camp, thirty miles from any cultivation.—T. J. W. BURGESS, M. D., *London, Ontario, Canada.*

A New Polyporus.—POLYPORUS RENIFORMIS, n. sp. Pileus sessile or substipitate, reniform or dimidiate, ascending, concave above and convex below; the surface ferruginous, concentrically sulcate and subzonate; the margin thin and acute; the context ferruginous, soft, floccose, covered with a thin rigid rather elastic

crust; stratum of tubules occupying about a third of the pileus, ferruginous within, their mouths very small and covered but not closed with a white powder. Spores ferruginous, elliptic-ovoid, .008–.001 mm. long by .006–.007 mm. broad.

Pileus projecting 2–4 in. with a breadth of 3–6 in. and a thickness at the base of ¾–1½ in. gradually thinning out all round to the edge. This species is properly always annual: there are indeed stratified specimens of two or three years growth but in all cases a new stratum of hymenophore is formed for each annual layer of tubules, leaving the preceding growths to crumble and decay.

Growing always about the base of old stumps in an ascending position; I have never found a specimen upon a log. I have met with the species from Dayton, O., down the Miami Valley to Cincinnati and into Kentucky beyond Lexington.

This is a curious member of the group of FOMENTARII of Fries. It has passed heretofore for *P. applanatus*, Pers., but the true *applanatus* grows here abundantly upon stumps and logs and Mr. James, Mr. Meyncke and myself readily distinguish one from the other upon sight. It will be seen that it has affinities also with *P. lucidus*, Leys.—A. P. MORGAN.

Lactuca Scariola, L.—This plant, possessing the habit of the Compass Plant in placing its vertical leaves so as to point to the poles, at the time of the publication of Gray's Manual, last edition, was known only at Cambridge, Mass. In a short time it has reached the Mississippi. It is quite abundant at Dayton, Ohio. At Put-in-Bay, Lake Erie it has already become a pest. It is beginning to make its appearance about Detroit, Mich. A few specimens (3–5) were observed by myself at Lincoln in Central Illinois. The above stations I found myself. It is in the list of H. Eggert of St. Louis, Mo. Mr. Bebb has found it at Rockford, Ill. The latter city is so close to Wisconsin that the plant probably grows there or soon will reach that state. A friend, not a botanist, but a good observer, claims to have seen the plant near Richmond, Indiana. The geographical distribution of *Lactuca Scariola*, therefore, west of the Alleghanies, would be *Ohio to Missouri and northward*.—AUG. F. FOERSTE, *Dayton, Ohio.*

The Gazette for 1883.—The attention of our readers is called to the fact that the time for the renewal of subscriptions has come. Every year has brought a large increase to our subscription list and we can assure our patrons that Volume VIII will contain much to interest and instruct. And again we would repeat to our more modest and retiring botanists what we have said so often, that while giving space to somewhat formal papers it is by no means to the exclusion of notes and scraps of information given in the most informal way.